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EXAMINER
PULLIAS, JESSE SCOTT

ART UNIT	PAPER NUMBER
2626	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/552,772	SCHUIJERS ET AL.
Office Action Summary	Examiner	Art Unit	
	JESSE S. PULLIAS	2626	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>21 July 2008</u>.

2a) ☒ This action is FINAL.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1,16 and 19-22</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1, 16 and 19-22</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   This office action is in response to correspondence filed 07/21/08 regarding application 10/552772, in which claims 1 and 16 were amended, and claims 19-22 are new. Claims 1, 16, and 19-22 are pending in the application and have been considered.

Response to Arguments

2.   The amended title overcomes the objection to the specification, so the objection is withdrawn.

3.   Claim 18 is cancelled, so the 35 U.S.C. 101 rejection of claim 18 is moot.

4.   Applicant's arguments on page 10 with respect to claims 1 and 16 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

5.   Claims 1 and 16 are objected to because of the following informalities: The examiner assumes applicant intended in line 3 "left had" to be "left hand". Appropriate correction is required.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section
351(a) shall have the effects for purposes of this subsection of an application filed in the United States
only if the international application designated the United States and was published under Article 21(2)
of such treaty in the English language.

7.   Claims 1, 16, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by

Baumgarte et al. (7,006,636).

        Consider claim 1, Baumgarte discloses method for generating a wideband time

domain output audio signal comprising a left hand audio signal component and a right

hand signal component from a wideband time domain input audio signal **(Fig 3,** L, L', R,

and R'**)**, the method comprising the steps of:

        transforming the wideband time domain input audio signal to a sub-band domain

input signal comprising a plurality of input sub-band signals **(Fig 4,** TF transforms**)**, the

input sub-band signals in a first frequency range of the wideband frequency range

having a narrower frequency band than the input sub-band signals in a second

frequency range of the wideband frequency range **(Col 6 lines 25-31,** critical bands

inherently cover frequency ranges varying in width, with the higher bands wider**)**;

        delaying the sub-band signals so as to obtain delayed sub-band signals **(Col 9

lines 44-47)**;

        deriving a first and a second processed sub-band signal by mixing a sub-band

signal and a corresponding delayed sub-band signal **(Col 9 lines 48-51,** critical bands

delayed, **Col 7 lines 45-50,** critical bands are mixed by weighting factors**)**;

        inverse transforming the first processed sub-band signals so as to obtain the left

hand audio signal component of the wideband time domain output audio signal **(Col 7

lines 37-40), and

inverse transforming the second processed sub-and signals so as to obtain the

right hand audio signal component of the wideband time domain output audio signal

(Col 7 lines 37-40).

Consider claim 16, Baumgarte discloses a device for generating a wideband time

domain output audio signal comprising a left hand audio signal component and a right

hand signal component from a wideband time domain input audio signal **(Fig 3,** L, L', R,

and R'**)**, the device comprising:

a transformer unit for transforming the wideband time domain input audio signal

to a sub-band domain input signal comprising a plurality of input sub-band signals **(Fig

4, TF transforms)**, the input sub-band signals in a first frequency range of the wideband

frequency range having a narrower frequency band than the input sub-band signals in a

second frequency range of the wideband frequency range **(Col 6 lines 25-31,** critical

bands inherently cover frequency ranges varying in width**)**;

a delay unit for delaying the sub-band signals so as to obtain delayed sub-band

signals **(Col 9 lines 44-47)**;

a mixing unit for deriving a first and a second processed sub-band signal by

mixing a sub-band signal and a corresponding delayed sub-band signal **(Col 9 lines 48-

51,** critical bands delayed, **Col 7 lines 45-50,** critical bands are mixed by weighting

factors**)**;

an inverse transformation unit for inverse transforming the first processed sub-

band signals so as to obtain the left hand audio signal component of the wideband time

domain output audio signal **(Col 7 lines 37-40)**, and inverse transforming the second

processed sub-and signals so as to obtain the right hand audio signal component of the

wideband time domain output audio signal **(Col 7 lines 37-40)**.

Consider claim 19, Baumgarte discloses the first frequency range is a low

frequency portion of the wideband frequency range and the second frequency range is

a high frequency portion of the wideband frequency range **(Col 6 lines 31-35,** lower and

higher critical bands**)**.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Baumgarte et al (7,006,636) in view of Akagiri (5,774,844).

Consider claim 20, Baumgarte discloses:

a first transformation block for transforming the wideband time domain input

audio signal into a plurality of narrow band sub-band signals in said first and second

frequency range **(Fig 4,** TF transforms**)**;

a delay block for delaying the sub-signals in the second frequency range so as to obtain the input sub-band signals in said second frequency range **(Col 9 lines 44-47, critical bands are delayed)**, and wherein the inverse transformation unit comprises:

an inverse transformation block for inverse transforming the first processed sub-band signals in said first frequency range and the first processed sub-band signals in said second frequency range into said left hand audio signal component of the wideband time domain audio output signal **(Col 7 lines 37-40)**; and

an inverse transformation block for inverse transforming the second processed sub-band signals in said first frequency range and the second processed sub-band signals in said second frequency range into said right hand audio signal component of the wideband time domain output audio signal **(Col 7 lines 37-40)**.

Baumgarte does not specifically teach a second transformation block for transforming the narrow band sub signals in said first frequency range into the input sub-band signals in said first frequency range, the bandwidth of the input sub-band signals in said first frequency range being smaller than the bandwidth of the narrow band sub-signals in said first frequency range; a first inverse transformation block for inverse transforming the first processed sub-band signals in said first frequency range into first processed narrow band sub-band signals in said first frequency range, the bandwidth of the first processed narrow band sub-band signals being larger than the bandwidth of the first processed sub-band signals; and a second inverse transformation block for inverse transforming the second processed sub-band signals in said first frequency range into second processed narrow band sub-band signals in said first

frequency range, the bandwidth of the second processed narrow band sub-band signals
being larger than the bandwidth of the second processed sub-band signals.

Akagiri discloses a transformation block for transforming narrow band sub signals
in said first frequency range **(Fig 1,** 0-5.5kz**)** into the input sub-band signals in said first
frequency range **(Fig 1,** MDCT 15**)**, the bandwidth of the input sub-band signals in said
first frequency range being smaller than the bandwidth of the narrow band sub-signals
in said first frequency range **(Fig 1,** sub-bands output from MDCT 15 are narrower than
input 0-5.5kHz band, **Col 10 lines 31-35)**;

a first inverse transformation block for inverse transforming a first processed sub-
band signals in a first frequency range into first processed narrow band sub-band
signals in said first frequency range, the bandwidth of the first processed narrow band
sub-band signals being larger than the bandwidth of the first processed sub-band
signals **(Fig 20,** IMDCT 115**)**; and

a second inverse transformation block for inverse transforming a second
processed sub-band signals in said first frequency range into second processed narrow
band sub-band signals in said first frequency range, the bandwidth of the second
processed narrow band sub-band signals being larger than the bandwidth of the second
processed sub-band signals **(Fig 20,** IMDCT 115, **Col 1 lines 8-9,** coding/decoding
stereo audio requires IMDCT for each channel synthesized**)**.

It would have been obvious to one of ordinary skill in the art at the time of the
invention to modify the invention of Baumgarte to include a second transformation
block for transforming the narrow band sub signals in said first frequency range into the

input sub-band signals in said first frequency range into the input sub- band signals in

said first frequency range, the bandwidth of the input sub-band signals in said first

frequency range being smaller than the bandwidth of the narrow band sub-signals in

said first frequency range, a first inverse transformation block for inverse transforming

the first processed sub-band signals in said first frequency range into first processed

narrow band sub-band signals in said first frequency range, the bandwidth of the first

processed narrow band sub-band signals being larger than the bandwidth of the first

processed sub-band signals, and a second inverse transformation block for inverse

transforming the second processed sub-band signals in said first frequency range into

second processed narrow band sub-band signals in said first frequency range, the

bandwidth of the second processed narrow band sub-band signals being larger than the

bandwidth of the second processed sub-band signals, in order to implement efficient

coding/decoding by taking the hearing sense characteristic of the human being into

consideration, as suggested by Akagiri **(Col 19 lines 10-15, 31-35).**

Consider claim 21, Baumgarte discloses the mixing unit derives the first and a

second processed sub-band signal from the sub-band signal and the corresponding

delayed sub-band signal under the influence of parameter signals **(Col 6 lines 66-67,**

coherence estimation).

Consider claim 22, Baumgarte discloses the mixing unit derives the first

processed sub-band signal by combining, in a first combining step, the sub-band signal

and the corresponding delayed sub-band signal under the influence of the parameter

signals, and derives the second processed sub-band signal by combining, in a second

combining step, the sub-band signal and the corresponding delayed sub-band signal

under the influence of the parameter signals, said combining steps including scaling the

sub-band signal and the corresponding delayed sub-band signal **(Col 9 lines 45-55,**

delaying and scaling with gain factors, based on coherence, see **Col 8 lines 39-45)**.

Conclusion

10.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

11.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jesse Pullias whose telephone number is 571/270-5135. The examiner can normally be reached on M-F 9:00 AM - 4:30 PM.

12.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571/272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571/270-6135.

13.   Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jesse S Pullias/
Examiner, Art Unit 2626

                                          /Talivaldis Ivars Smits/
                                          Primary Examiner, Art Unit 2626

10/23/2008